

PATENT ABSTRACTS OF JAPAN

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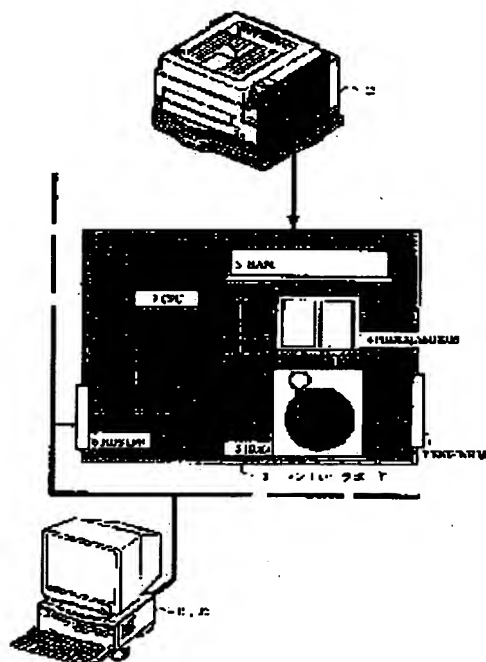
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(54) PRINTER

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a printer capable of carrying out the version-up of a printer program without any operation of a user.

SOLUTION: A controller board 1 periodically accesses a network server 11 every three days for instance based on a program stored in a program ROM 4 beforehand and retrieves whether or not the printer driver program and the system program of this printer of the version newer than the version stored in an HDD(hard disk drive) 5 are up-loaded. In the case that the new version is present, it is down-loaded from the network server 11 to the HDD 5 and then, the abstract is stored in the HDD 5.



LEGAL STATUS

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CLAIMS

[Claim(s)]

[Claim 1] The printer which has a means to ask whether there is any version higher than the program of the system program periodically remembered to be a storage means for memorizing a program by said storage means to the server on a network or a driver program, to make download the program of the version when there is a high version, and to memorize for said storage means.

[Claim 2] The printer which has a means to upload the driver program memorized by said storage means when the driver program which the driver program was asked to with the storage means for memorizing a program to the host computer on a network, and was answered from the host computer was older than the driver program memorized by said storage means to a host computer.

[Claim 3] The printer which has a means to ask that a driver program is a storage means for memorizing a program to the host computer on a network, to make download the program when the driver program answered from the host computer is newer than the driver program memorized by said storage means, and to memorize for said storage means.

[Claim 4] The printer according to claim 1 or 3 characterized by the ability of the program downloaded for said storage means to change with the directions from a host computer.

[Claim 5] The printer according to claim 1 to 4 characterized by the ability to print out the abstract of said program downloaded and uploaded.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates especially to version up of a printer program about the printer which operates by the program of a system program or a driver program.

[0002]

[Description of the Prior Art] Generally, the driver which operates a printer must install ten kinds of drivers in each computer connected to the network, when it is created by the original program for every printer and ten kinds of printers exist under a network environment. Moreover, when a driver is upgraded, similarly, a floppy disk must be used for one one-set computer, and a driver must be installed.

[0003] As a conventional approach, a driver is memorized to a Network Server, and when a user operates it by the Network Server side, how to install this in a printer through a network can be considered. Moreover, the approach of a user operating a host computer, for example to JP,1-112424,A, and downloading a program to a printer as other conventional approaches, is learned.

[0004]

[Problem(s) to be Solved by the Invention] However, by the approach of a user operating it by the Network Server and host computer side, and installing a program in a printer through a network, since a user has to operate a Network Server and a host computer for every version up, there is a trouble that actuation is troublesome. Moreover, if the number of printers is one, time and effort will not pose a problem, either, but a huge effort is needed when there are many printers.

[0005] This invention aims at offering the printer which can upgrade a printer program in view of the above-mentioned conventional trouble, without a user operating it in any way.

[0006]

[Means for Solving the Problem] Ask whether this invention has a version higher than the program of the system program periodically remembered to be a storage means for memorizing a program by said storage means to the server on a network, or a driver program in order to attain the above-mentioned purpose, when there is a high version, the program of the version is made to download, and it is characterized by to have a means memorize for said storage means.

[0007] It is characterized by for this invention to have a means upload the driver program memorized by said storage means when the driver program which the driver program was asked to with the storage means for memorizing a program to the host computer on a network again, and was answered from the host computer was older than the driver program memorized by said storage means to a host computer.

[0008] It is characterized by for this invention to have a means to ask again that a driver program is a storage means for memorizing a program to the host computer on a network, to make download the program when the driver program answered from the host computer is newer than the driver program memorized by said storage means, and to memorize for said storage means.

[0009] Moreover, the program downloaded for said storage means is characterized by the ability to change with the directions from a host computer.

[0010] Moreover, it is characterized by the ability to print out the abstract of said program downloaded and uploaded.

[0011]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained with reference to a drawing. A flow chart for a flow chart for the block diagram showing 1 operation gestalt of the network equipped with the printer which drawing 1 requires for this invention, the block diagram in which drawing 2 shows the configuration of the printer of drawing 1, and drawing 3 to explain the processing downloaded from a server to a printer, and drawing 4 to explain the processing uploaded from a printer to a client computer, and drawing 5 are the flow charts for explaining the processing downloaded from a client computer to a printer.

[0012] The printer 13 is connected with the server computer 11 and the client computer 12 in the network shown in drawing 1. A printer 13 has a controller board 1 and a control panel 8, and a controller board 1 has HDD (hard disk drive)5, and host I/F6 and engine I/F7 as CPU2, RAM3, and a program ROM 4 and large capacity storage, as shown in drawing 2 in detail.

[0013] CPU2 controls the whole printer 13 by the program beforehand memorized by the program ROM 4, the mode processing from a control panel 8, the command from host computers 11 and 12, etc. RAM3 is used as work-piece memory, an input buffer, a page buffer, and memory for download, and HDD5 is used in order to memorize a driver system program etc. Host I/F6 communicates in both directions among host computers 11 and 12, and engine I/F7 is used in order to control non-illustrated printer engine.

[0014] Next, actuation is explained with reference to drawing 3. It searches whether neither the printer driver program of a version newer than the version which performs periodically processing shown in drawing 3 like day by day [3] based on the program beforehand memorized by the program ROM 4 (step S1), accesses Network Server 11 first, and is memorized by HDD5, nor the system program of a printer has uploaded the controller board 1 (step S2 - S4). And when there is a high version, it is downloaded from Network Server 11 to HDD5 (step S4→ S5), and subsequently to HDD5, the abstract is memorized (step S6).

[0015] The processing shown in drawing 4 is started when a printing demand comes from a client computer 12, and the present driver version is first asked to a client computer 12 (step S11).

And when there is a thing older than the version memorized by HDD5 among the current driver versions answered from the client computer 12, the version is uploaded to a client computer 12 (steps S12-S14), and, subsequently to HDD5, the abstract is memorized (step S15).

[0016] The processing shown in drawing 5 is also started when a printing demand comes from a client computer 12 (step S21), and the present driver version is first asked to a client computer 12 (step S22). And when there is a thing newer than the version memorized by HDD5 among the current driver versions answered from the client computer 12, the version is downloaded from a client computer 12 to HDD5 (steps S23-S25), and, subsequently to HDD5, the abstract is memorized (step S26).

[0017] Moreover, when it uploaded and downloads like the above, in memorizing the abstract to HDD5, the address of a phase hand computer, the time at that time, etc. are recorded as an abstract, and when there is an output request from a command or the operation panel 8, it outputs with printer engine.

[0018] Therefore, according to the above-mentioned example, a printer 13 can upgrade a program automatically, without a user operating it in any way. Moreover, whenever it carries out exchange possible [of the program downloaded to the printer 13 when a user operated host computers 11 and 12] in addition to the above-mentioned actuation, the program by the side of a printer 13 can be made into the newest version.

[0019]

[Effect of the Invention] Since the program of the version is made to download when it asks whether there are a system program of a high version and a program of a driver program periodically to the server on a network according to this invention as explained above, and there is a high version, a printer program can be upgraded without a user operating it in any way.

[0020] Moreover, since it asks whether there are a system program of a high version and a program of a driver program to the host computer on a network, and a high version is uploaded

from a printer to a host computer or a printer is made to download it from a host computer, a system-wide program can be upgraded, without a user operating it in any way.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing 1 operation gestalt of the network equipped with the printer concerning this invention.

[Drawing 2] It is the block diagram showing the configuration of the printer of drawing 1 .

[Drawing 3] It is a flow chart for explaining the processing downloaded from a server to a printer.

[Drawing 4] It is a flow chart for explaining the processing uploaded from a printer to a client computer.

[Drawing 5] It is a flow chart for explaining the processing downloaded from a client computer to a printer.

[Description of Notations]

2 CPU

5 HDD

11 Client Computer

12 Server Computer

13 Printer

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